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Serial Number: 09/808,750 Filing Date: March 15, 2001

Title: DEVICE AND METHOD TO REDUCE WORDLINE RC TIME CONSTANT IN SEMICONDUCTOR MEMORY DEVICES

REMARKS

This paper responds to the Office Action dated on April 15, 2005.

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Claims 1, 5, 8, 15, 19, 26, 30, 37, 45, and 49 are amended, and no claims are added; as a result, claims 1-41 and 45-54 are now pending in this application.

§102 Rejection of the Claims

Claims 1-4, 8-14, 15-18, 26-29 were rejected under 35 U.S.C. § 102(b) as being anticipated by Cowles (U.S. Patent No. 5,940,315). Applicant respectfully traverses the rejection. To anticipate a claim, the reference must teach every element of the claim. *M.P.E.P.* § 2131.

Concerning claims 1-4:

Applicant cannot find in Cowles, among other things,

a strapping line of lower resistance than the wordlines coupled to a single continuous wordline in a single array wherein the strapping line bypasses only a portion in a middle region between a first and second end of the single continuous wordline, wherein the strapping line is spaced apart from adjacent conductive structures by a distance greater than a wordline pitch, and wherein the strapping line bypasses only a portion of a wordline within the single array and bypasses a different portion of a wordline within the single array than an adjacent strapping line,

as presently recited or incorporated in the contested claims. The conducting straps of Cowles apparently bypass a wordline across an entire memory array (see e.g., FIG. 2A).

Concerning claims 8-14:

Applicant cannot find in Cowles, among other things,

a number of strapping devices which bypass portions of the wordlines in the single array of parallel wordlines, wherein at least one portion of a single continuous wordline is only in a middle region between a first and second end of the single continuous wordline, and wherein adjacent strapping devices bypass only a portion of a wordline within the memory array and bypass different portions of adjacent wordlines within the memory array,

as presently recited or incorporated in the contested claims.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.116 – EXPEDITED PROCEDURE

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Concerning claims 15-18:

Applicant cannot find in Cowles, among other things,

a strapping line of lower resistance than the wordlines coupled to a single continuous wordline wherein the strapping line bypasses only a portion of the wordline within the memory array in a middle region between a first and second end of the single continuous wordline, wherein the strapping line is spaced apart from adjacent conductive structures by a distance greater than a wordline pitch, and wherein the strapping line bypasses a different portion of a wordline within the memory array than an adjacent strapping line,

as presently recited or incorporated in the contested claims.

Concerning claims 26-29:

Applicant cannot find in Cowles, among other things,

a strapping line of lower resistance than the wordlines coupled to a single continuous wordline wherein the strapping line bypasses only a portion in a middle region between a first and second end of the single continuous wordline and bypasses only a portion of the wordline within the memory array, wherein the strapping line is spaced apart from adjacent conductive structures by a distance greater than a wordline pitch, and wherein the strapping line bypasses a different portion of a wordline within the memory array than an adjacent strapping line,

as presently recited or incorporated in the contested claims.

Applicant respectfully requests reconsideration and allowance of claims 1-4, 8-14, 15-18, and 26-29.

Claims 5-7, 19-25, 30-36, 37-41, 45-48, and 49-54 were rejected under 35 U.S.C. § 102(b) as being anticipated by Cowles (U.S. Patent No. 5,940,315). Applicant respectfully traverses the rejection.

Concerning claims 5-7:

Applicant cannot find in Cowles, among other things,

a plurality of separate strapping lines of lower resistance than the wordlines coupled to at least one of the number of wordlines in a single array wherein the strapping lines bypass a plurality of separate portions of a single continuous wordline, and wherein adjacent strapping lines bypass only a portion of a wordline within the memory array and bypass different portions of adjacent wordlines within the memory array,

as presently recited or incorporated in the contested claims. The conducting straps of Cowles apparently bypass a wordline across an entire memory array (see e.g., FIG. 2A).

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Concerning claims 19-25:

Applicant cannot find in Cowles, among other things,

a number of separate strapping devices which bypass separate portions of a single continuous wordline in the single array of parallel wordlines, and wherein adjacent strapping devices bypass only a portion of a wordline within the memory array and bypass different portions of adjacent wordlines within the single array,

as presently recited or incorporated in the contested claims.

Concerning claims 30-36:

Applicant cannot find in Cowles, among other things,

a number of strapping devices which bypass only portions of the wordlines in the single array of parallel wordlines, wherein at least one portion of a single continuous wordline is in a middle region between a first and second end of the single continuous wordline, and wherein adjacent strapping devices bypass only a portion of the wordline within the memory array and bypass different portions of adjacent wordlines within the memory array,

as presently recited or incorporated in the contested claims.

Concerning claims 37-41:

Applicant cannot find in Cowles, among other things,

spacing a number of strapping devices over wordlines within a single memory array apart from adjacent strapping devices by a distance greater than a wordline pitch, wherein adjacent strapping devices bypass different portions of adjacent wordlines within the single memory array,

as presently recited or incorporated in the contested claims.

Concerning claims 45-48:

Applicant cannot find in Cowles, among other things,

attaching a strapping line of lower resistance than the wordlines to a single continuous wordline wherein the strapping line bypasses only a portion in a middle region between a first and second end of the single continuous wordline, wherein the strapping line is spaced apart from adjacent conductive structures by a spacing greater than a wordline pitch and wherein the strapping line bypasses only a portion of a wordline within the memory cell array and bypasses a different portion of a wordline within the memory cell array than an adjacent strapping line,

as presently recited or incorporated in the contested claims.

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Regarding claims 49-54:

Applicant cannot find in Cowles, among other things,

attaching a number of strapping lines of lower resistance than the wordlines which bypass portions of the wordlines in the array of parallel wordlines, wherein at least one portion of a single continuous wordline is only in a middle region between a first and second end of the single continuous wordline, wherein the strapping lines are each located a distance from each other that is greater than the pitch, and wherein adjacent strapping lines bypass different portions of adjacent wordlines within the single array,

as presently recited or incorporated in the contested claims.

Regarding claims 49-54:

Applicant cannot find in Cowles, among other things,

attaching a number of strapping lines of lower resistance than the wordlines which bypass portions of the wordlines in the array of parallel wordlines and bypass only a portion of a wordline within the memory cell array and, wherein at least one portion of a single continuous wordline is only in a middle region between a first and second end of the single continuous wordline, wherein the strapping lines are each located a distance from each other that is greater than the pitch, and wherein adjacent strapping lines bypass different portions of adjacent wordlines within the memory cell array,

as presently recited or incorporated in the contested claims.

Applicant respectfully requests reconsideration and allowance of claims 5-7, 19-25, 30-36, 37-41, 45-48, and 49-54.

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CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612) 349-9587 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

HUY T. VO

By his Representatives,

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